

THE SYSTEMATIC STATUS OF *AMBLYCYPHRUS ASPERATUS*,
THRENUS NIGER, *PYCNOMORPHA CALIFORNICA*,
EMMENASTUS RUGOSUS, AND
BIOMORPHUS TUBERCULATUS MOTSCHULSKY
(COLEOPTERA: TENEBRIONIDAE)

ROLF L. AALBU, THEODORE J. SPILMAN, AND KIRBY W. BROWN

(RLA) Essig Museum of Entomology, 211 Wellman Hall, University of California, Berkeley, California 94720; (TJS) 4903 Jamestown Road, Bethesda, Maryland 20816; and (KWB) 4570 E. 3rd. N., Joseph City, Arizona 86030.

Abstract.—The systematic status of *Amblycyphrus asperatus*, *Threnus niger*, *Pycnomorpha californica*, *Emmenastus rugosus*, and *Biomorphus tuberculatus* Motschulsky (Coleoptera: Tenebrionidae) is resolved.

The following changes are proposed: *Amblycyphrus* is placed as a junior synonym of *Cryptoglossa* Solier (Cryptoglossini); *Amblycyphrus asperatus* Motschulsky is placed as a junior synonym of *Cryptoglossa spiculifera pectoralis* (Blaisdell) [new combination and status]; *Threnus* Motschulsky is placed as a synonym of *Argoporis* Horn (Cerenopini), *Threnus niger* Motschulsky becomes *Argoporis niger niger* (Motschulsky) [new combination], *Argoporis constanzae constanzae* Berry is placed as a junior synonym of *Argoporis niger niger* (Motschulsky), *Argoporis constanzae inflata* Berry becomes *Argoporis niger inflata* Berry [new combination]; *Emmenastus* Motschulsky is placed as a synonym of *Oxycara* Solier [Tentyriini]; *Emmenastus rugosus* Motschulsky becomes *Oxycara rugosa* (Motschulsky) [new combination]; *Biomorphus* Motschulsky is placed as a synonym of *Helops* Fabricius; *Biomorphus tuberculatus* Motschulsky is placed as a junior synonym of *Helops attenuatus* LeConte (Helopini); *Pycnomorpha* Motschulsky is retained as a valid genus with *Pycnomorpha californica* Motschulsky as type and two species added, *Pycnomorpha gibbicollis* (Horn) [new combination, transferred from *Trichiasida*], and *Pycnomorpha tumidicollis* (Blaisdell) [new combination, transferred from *Stenomorpha*] (Asidini). Keys are provided to *Pycnomorpha* and its species.

Key Words: Coleoptera, Tenebrionidae, Motschulsky, *Amblycyphrus*, *Threnus*, *Pycnomorpha*, *Emmenastus*, *Biomorphus*, classification

A number of genera have historically been included in catalogs as belonging to the North American fauna but have remained a mystery to later workers. Five of these are genera described by Motschulsky in the late 19th century. All five species, described by Motschulsky in 1845, 1870, and 1872 were known only from the type specimen. The types were deposited in the Moscow State

Museum, then the Imperial University Museum, in Moscow, Russia. These five specimens remained unknown for more than a hundred years since their original description. Recently, through the kind help of Dr. N. B. Nikitsky of the Moscow State Museum, Russia, these five holotypes were borrowed by one of us (RLA) and examined by us, finally solving the mystery of these gen-

era. Two occur in California, two occur in Baja California and one is not North American. The taxonomic position of these genera is discussed below.

Amblycyphrus and *Threnus*

While working on a Ph.D. dissertation (Aalbu 1985) concerning the systematics of the tribe Cryptoglossini, it became necessary to determine the status of genera and species previously included in catalogs as belonging to this tribe. These included the Motschulsky genera *Amblycyphrus* and *Threnus*.

Amblycyphrus Motschulsky 1870: 401.

Amblycyphrus asperatus Motschulsky 1870: 404. Champion 1895: 46 (catalog); Gebien 1910: 121, 1937: 701 (catalog).

Threnus Motschulsky 1870: 404. Bradley 1930: 184 (classification)

Threnus niger Motschulsky 1870: 406. Gebien 1911b: 611, 1937: 701 (catalog); Leng 1920: 224 (catalog); Arnett 1960: 652, 672 (classification, distribution); Papp 1961: 106 (catalog); Blackwelder and Arnett 1975: 73.20 (catalog); Arnett 1985: 347 (list).

Motschulsky (1870: 401–404) assigned *Amblycyphrus*, as a “Melasoma of the tribe of the Akisites,” mentioning that this genus was most closely related to *Centrioptera* Mannerheim. He distinguished *Amblycyphrus* from *Centrioptera* by the following characters: (1) “retractile labrum, which is often entirely hidden under the clypeus”; (2) “mandibles, which are more distinctly denticulate”; (3) “less thickened, non-moniliform antennae with a non-transverse sub-apical segment”; (4) “finely punctate elytral striae with the asperities being more obtuse but more pronounced”; (5) “more parallel prosternum, terminating arrow-shaped and not emarginate”; (6) “non-bilobed mesosternum”; and (7) “more slender legs with longer apical tarsal segment,” all unreliable, non-diagnostic characters. Motschulsky also distinguished this genus from *Asbolus* LeConte mentioning “the genus *Asbolus* of

M. LeConte has a generally shorter form, with the asperities of the elytra tuberculate and much more developed, the truncate, very transverse, apical segment, the visible labrum etc.”

Unlike *Amblycyphrus*, Motschulsky assigned *Threnus*, as a “Melasoma of the tribe of the Centriopterides” but compared this genus not to *Centrioptera* but to *Cerenopus* LeConte [Tenebrioninae: Cerenopini] (Lacordaire, in 1859 had included *Cerenopus* in the Centriopterides). Motschulsky distinguished *Threnus* from *Cerenopus* by: (1), antennae distinctly enlarged toward extremity; (2), elytra not enlarged posteriorly; (3), epistoma less produced posteriorly; and (4), dissimilar dentition on inflated parts of femorae and tibiae.

Upon examination of these types, several bibliographical problems became apparent. The following observations were made:

(1) The specimen labeled “*Threnus niger* Mots., Calif.” (green label with black handwritten ink) is an *Argoporis* (Cerenopini), specifically *Argoporis constanzae constanzae* Berry 1980, a species which occurs in Baja California Sur. The problem in this case is that the genus *Argoporis* Horn, was also described in 1870 in Horn’s Revision (p. 325).

(2) The other specimen is labeled “*Centrioptera asperata* Mots., Calif.,” not *Amblycyphrus asperatus* (also green label with black handwritten ink). This specimen is not *Centrioptera asperata* Horn, as one might suspect, but what Blaisdell (1921: 199) described as *Centrioptera dulzurae*. The problem in this case is that *Centrioptera asperata* Horn was also described in 1870 (p. 279) which makes these homonyms.

As the exact date of both publications cannot be positively determined, following the Rules of Zoological Nomenclature, both articles are dated December 31, 1870. Because less disruption of current literature and classification will result, Horn 1870 is selected as having priority over Motschulsky 1870.

As part of the systematic treatment of the

tribe Cryptoglossini, a number of changes in combination and/or status of various genera and species resulted. These changes are discussed in detail in Aalbu (in press). Some of these changes, pertinent to a discussion of *Amblycyphrus*, are listed here. *Amblycyphrus asperatus* Motschulsky is a synonym [of *Cryptoglossa spiculifera pectoralis* (Blaisdell)] and a secondary homonym [of *Cryptoglossa asperata asperata* (Horn) 1870] and is retained in the Cryptoglossini.

The following changes are proposed:

Cryptoglossa Solier 1836: 680

Amblycyphrus Motschulsky 1870: 401 NEW SYNONYMY

Cryptoglossa spiculifera pectoralis (Blaisdell) 1921: 198 NEW COMBINATION and NEW STATUS

Amblycyphrus asperatus Motschulsky 1870: 404 NEW SYNONYMY

Centrioptera dulzurae Blaisdell 1921: 199 NEW SYNONYMY

Argoporis Horn 1870: 325

Threnus Motschulsky 1870: 404 NEW SYNONYMY

Argoporis niger niger (Motschulsky 1870: 406) NEW COMBINATION

Argoporis constanzae constanzae Berry 1980: 35 NEW SYNONYMY

Argoporis niger inflata Berry 1980: 36 NEW COMBINATION

Emmenastus

Emmenastus Motschulsky 1845: 75.

Emmenastus rugosus Motschulsky 1845: 76. Lacordaire 1859: 59 (classification); Gemminger and Harold 1870: 1934 (catalog); Gebien 1910: 18, 1937: 588 (catalog); Leng 1920: 221 (catalog); Blackwelder 1945: 512 (*Emmenastus*) (catalog); Arnett 1960: 665 (distribution); Papp 1961: 100 (catalog); Blackwelder and Arnett 1975: 73.10 (catalog).

Emmenastus rugosus Motschulsky has been doubtfully recorded from Alaska. *Emmenastus* was described as a new genus by

Motschulsky (1845: 75) with two new species: *compactus* (1845: 76) from Kamchatka in eastern Siberia and *rugosus* (1845: 76) from Sitka in Russian America, now Alaska. Because it had not been collected since its original description *E. compactus* was doubtfully included in the Kamchatka faunal list. That problem was solved by Bogachev (1968: 889) when he examined three type specimens of *E. compactus* in the Zoological Museum of University of Moscow and determined that *compactus* is actually a species of *Oxycara* Solier previously known as *O. cribrata* Wollaston 1867; it occurs not on Kamchatka but on the Cape Verde Islands off western Africa. Even though Motschulsky's published type locality was Kamchatka, the type specimens bore labels indicating Tenerife. (Bogachev did not find the type of *E. rugosus* in Moscow University or the Zoological Institute.)

Soon after Motschulsky described *Emmenastus rugosus*, Mannerheim (1852: 287, 288, 291, 387) discussed the lack of Melasomes (Tenebrionidae) in the area of Sitka and their abundance in California, said he did not receive specimens of *E. rugosus* from Motschulsky, doubted that the species occurs at Sitka, and indicated the doubt with question marks in his list of species. Then Mannerheim (1853: 110–112) said he examined Motschulsky's specimens but doubted that the type specimen of *E. rugosus* came from Sitka; he placed *E. rugosus* in *Blapstinus* near *B. pulverulentus* Mannerheim, saying that he had specimens from northern California. LeConte (1866: 106) and Horn (1870: 268, 402) considered *Emmenastus rugosus* to be unrecognizable. Nevertheless, they along with Champion (1884: 8) applied the generic name *Emmenastus* to previously described species (by LeConte) and to new species that are at present in the tribe Eurymetopini. These species were subsequently placed as types of or as species in other new genera by Casey (1907: 287) with only *E. rugosus* remaining in the genus but rejected as part of the American fauna. Blackwelder (1945: 512) placed *Em-*

menastus (attributed in error to Champion) as a synonym of *Hylocrinus* Casey. This synonymy is not explained, but the first species listed by Champion (1884: 9) is *Emmenastus longulus* (LeC.) which was later designated the type of *Hylocrinus* by Casey (1907: 289).

We have studied a specimen of *E. rugosus* from the Zoological Museum of the University of Moscow. The specimen has 3 small handwritten labels: "type"; "Tenerife?"; "*Emmenastus rugosus* Mots Tenerife?" The first label is on uncoated card, the other two on light blue coated card. The handwriting on these labels is different from that on the two examples of Motschulsky's labels published by Korchevsky (1937: pl. 16, fig. 23; pl. 21, fig. 33). We consider the specimen to be the type, even though Motschulsky's published locality, Sitka, does not appear on its labels. (As mentioned above, Bogachev had similar difficulties with labels on the original specimens of *E. compactus*.)

The type of *Emmenastus rugosus* differs from *E. compactus* as described by Bogachev (1968: 889), in the following ways: Pronotum having lateral margin with a thin, unraised flange; surface moderately convex. Elytra in dorsal view gradually widened from base to half-length, laterally curved gradually and then bluntly triangular to apex; dorsal surface moderately convex and widely embracing body; epipleura relatively broad, gradually narrowed posteriorly; surface with 4 or 5 irregular longitudinal furrows from which emanate short irregular lateral furrows. Prosternum without depression and erect hairs of male. Protibia with spurs long, the longer spur extending to apex of second tarsal article.

Motschulsky did not designate a type species for *Emmenastus*. The fate of the generic name depends on the designation of a type species and the fate of that species. LeConte (1866: 106) stated that *E. rugosus* is the type species, and Horn (1870: 268) agreed. Casey (1907: 287) says that *E. compactus* is the

type species because "it was so intended by Motschulsky." Casey was wrong; perhaps he thought that Motschulsky's placement of *compactus* before *rugosus* was an intention to designate. Gebien (1937: 588) in his catalogue stated that *compactus* is the type species. Surely LeConte's designation of 1866 was the first and therefore valid designation.

It appears that *E. rugosus*, like *E. compactus*, should be placed in *Oxycara* (Tentyriini). However, we have not been able to synonymize it with other described species of *Oxycara*. We make this placement especially because of two distinctive characters on the pro- and mesosternal processes: (1) Prosternal process broad, apex acute, in lateral view horizontal and projecting posterior to coxae so as to appear shelf-like; (2) mesosternum between coxae flat, broad, and distinctly lowered from remainder of mesosternum, anterior half becoming strongly grooved, and finally with distinct notch on anterior border for reception of apex of prosternal process.

The following changes are proposed:

Oxycara Solier 1835: 254

Emmenastus Motschulsky 1845: 75 NEW SYNONYMY

Oxycara rugosa (Motschulsky 1845: 76) NEW COMBINATION

Biomorphus

Biomorphus Motschoulsky 1872: 38. Bradley 1930: 323 (classification)

Biomorphus tuberculatus Motschulsky 1872: 40. Gebien 1911a: 463, 1941: 811(666) (catalog); Leng 1920: 236 (catalog); Arnett 1960: 688 (distribution); Papp 1961: 130 (catalog); Blackwelder and Arnett 1975: 73.71 (catalog); Arnett 1985: 348 (list).

Biomorphus tuberculatus is definitely North American. It has been placed in the Tenebrionini in most catalogs. Of the five under consideration here, its taxonomic position is perhaps the easiest to solve. It clear-

ly falls within the range of variation found in *Helops attenuatus* LeConte (Helopini). The following changes must be made:

Helops Fabricius 1775: 257

Biomorphus Motschulsky 1872: 38 NEW SYNONYMY

Helops attenuatus LeConte 1851: 137

Biomorphus tuberculatus Motschulsky 1872: 40 NEW SYNONYMY

Pycnomorpha

Pycnomorpha Motschulsky 1870: 398. Gebien 1910: 126 (synonymy)

Pycnomorpha californica Motschulsky 1870: 399. Champion 1895: 251 (catalog); Gebien 1910: 127 (catalog); Arnett 1960: 674 (distribution); Papp 1961: 110 (catalog); Blackwelder and Arnett 1975: 73.29 (catalog); Arnett 1985: 348 (list).

The type specimen of *Pycnomorpha californica* is in relatively poor condition. It was apparently found dead. It is encrusted with dirt, dust and old glue and missing its left mesothoracic and metathoracic legs and its right prothoracic and mesothoracic legs. Additionally, the left prothoracic leg has been reglued on to the specimen but not quite at the right position. The specimen is labeled "*Pycnomorpha californica* Mots., California" and "California," two green labels with black handwritten ink.

Motschulsky, in his description of *Pycnomorpha*, compared the genus to *Stenomorpha* Solier. Based on Solier's illustration, he distinguished the genus by the transverse labium, obtuse mandibles with pronounced middle tooth, more protruding ligula, prominent pronotum, legs not hairy, and elytra carinate on lateral margin. None of these characters are diagnostic. Fortunately, a number of specimens obviously conspecific with the type have been recently collected. This has made possible a more thorough comparison with other genera.

From the description alone coupled with the cited locality (Nova-Helvetia, an early

name for modern Sacramento) one of us (KWB) assumed that this species was the same as *Stenomorpha capitosa* (Horn), the only similar species known from the Sacramento area. However, examination of the Motschulsky specimen and the recently collected conspecific specimens clearly show that the locality cited must be in error and the actual location is central Baja California. Under the present classification of genera in the tribe Asidini, *Pycnomorpha* must be retained as a valid genus. Couplets in the Brown (1971: 28) key to genera of Asidini should be modified as follows:

- 10(9). Postgenal process projecting well beyond middle of mentum, often greatly thickened or swollen (Fig. 19); mentum in tight, broad contact with postgenal process; pronotum dilated laterally; elytral disc costate (1 sp., central Mexico) *Zaleucus* Champion
- 10'. Postgenal process rarely projecting beyond middle of mentum; if process projects beyond middle of mentum, then elytra disc not costate (see couplet 24) 11
- 23(22). Humeri of elytra prominent and reflexed, body length under 16 mm. (see couplet 21) *Asidopsis* Casey (part)
- 23'. Humeri of elytra inconspicuous, not reflexed 24
- 24(23). Mentum large, often in parallel contact with postgenal process; postgenal process thickened, rarely projecting beyond midpoint of mentum, base opposite gular pedestal abruptly bent, forming a quadrate open space; pronotum often inflated and gibbose; body glabrous; maxillary palpi weakly sexually dimorphic (3 spp., Baja California) *Pycnomorpha* Motschulsky
- 24'. Mentum smaller, not in contact with postgenal process which is usually thin; base of postgenal process opposite gular pedestal gradually bent, not forming a distinct quadrate open space 34
- 34(24'). Apical segment of maxillary palpus greatly enlarged and sexually dimorphic, rectitriangular in the female (Fig. 3), larger and scalene with proximal angle prolonged in the male (Fig. 2); ligula large and tumid (Fig. 25); body rarely hirsute (85 spp., & sub spp.s.; SW Canada, W. & Central U.S., Mexico) **Stenomorpha* Solier

34'. Apical segment of maxillary palpus smaller, only moderately enlarged and often not notably sexually dimorphic, at most recti-triangular in the male (Fig. 24); disc of pronotum and elytra with setae present, body often hirsute; ligula small, not tumid (Fig. 6) (20 spp.; SW. U.S., Mexico) *Trichiasida* Casey (part)

- flexed; posterior pronotal gibbae smoothly rounded; posterior pronotal angles obtuse, lateral margin of elytra rounded or carinate at basal 1/4 only; body surface sculpture dull or shiny 2
- 1'. Lateral edge of pronotum thick, strongly reflexed; posterior pronotal gibbae sharply carinate; posterior pronotal angles acute, lateral margin of elytra entirely carinate; body surface sculpture shiny *gibbicollis* (Horn)
- 2. Lateral margin of elytra rounded; body surface sculpture shiny *tumidicollis* (Blaisdell)
- 2a. Lateral margin of elytra rugosely carinate at basal 1/4; body surface sculpture dull *californica* Motschulsky

Pycnomorpha shares characteristics with the genera *Stenomorpha* and *Trichiasida*. It may be distinguished by the following:

It differs from *Stenomorpha* and *Trichiasida* by the thicker postgenal process, larger and thicker mentum, its lateral edge parallel to the postgenal process; proximal edge of postgenal process abruptly bent opposite gular pedestal forming a notable quadrate pocket, and by a more horizontal antennal shelf with a deeper and longer groove near the eye.

It further differs from *Stenomorpha* by a more slender antenna, smaller tomentose areas of the tenth antennal segment, and weaker sexual dimorphism of maxillary palpi.

It further differs from *Trichiasida* by the smaller tenth antennal segment, and glabrous body.

Two additional described species from Baja California are clearly congeneric with *Pycnomorpha californica*. They are *Trichiasida gibbicollis* (Horn) (originally described in *Asida*) and *Stenomorpha tumidicollis* Blaisdell. One might note that Horn (1880: 152) proposed *Asida gabbi* as a replacement name for *Asida gibbicollis* which was preoccupied in *Asida*; Casey (1912: 178) in placing *A. gabbi* into his new genus *Trichiasida*, restored the name as *T. gibbicollis*. The following changes are proposed:

Pycnomorpha gibbicollis (Horn 1870: 288)

NEW COMBINATION

Pycnomorpha tumidicollis (Blaisdell 1943: 226) NEW COMBINATION

The following key will separate the three species:

- 1. Lateral edge of pronotum thin, barely re-

A satisfactory number of specimens each species has been examined to verify that the characters are sufficiently constant to justify maintaining the above three distinct species. *Pycnomorpha tumidicollis* is from northern to central Baja California, *californica* from central, and *gibbicollis* southern. Several undescribed species from Baja California are on hand. Some species of *Stenomorpha* from southern California (Riverside and San Diego Counties) may also belong in *Pycnomorpha*. Further work on these genera is in progress.

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